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(THE EMERGENCY TRANSMISSION FREQUENCY)

There are two so-called "emergency" modes of operation incorporated into the AS-6 Communication package control circuits.

The first "emergency" mode is frequently referred to as the "panic" condition. This occurs when the data collector detects a critical change in the data being recorded and requests the communication package to make immediate transmission of the stored information to the base station. The data is transmitted once on each of the three frequencies selected by the long term programmer every half hour for a maximum of three hours, or until the transmission sequency is halted by a receipt signal from the base station.

The second "emergency" mode occurs when a failure is detected in some part of the communication package. More specifically, it occurs when the power amplifier fails to tune or deliver power on one or more of the assigned channels. To help insure reliable communication a fixed tuned channel is provided in the power amplifier which is set to one of the assigned frequencies in addition to the servo tuning also provided for this frequency. This is called the EMERGENCY FR FREQUENCY or EMERGENCY CHANNEL. It is the philosophy of the use of this Emergency Channel that the discussion is primarily concerned with .

The original intent was to try each of the three frequencies normally programmed for a transmission sequence and each time that

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failure to tune was noted to switch to the emergency frequency and transmit there instead. This would then require that the base station be provided with an additional receiver rack which could always cover the emergency frequency since a panic transmission might occur on the emergency frequency at any time.

The approaches currently in vogue are the following:

1. To always make four transmissions - one of which is the emergency frequency and cover the emergency frequency with the base station for 1 hour out of every 3 by the proper programming of the long term programmer. See (Insert)

2. To tune up on the emergency frequency after the normal sequence of three transmissions only if a failure to transmit occurred on one or more of the normal transmissions frequencies. Again, the programming of the long term programmer would ~~xxxx~~ cover the emergency frequency for 1 hour out of every 3.

The last approach is the one which we are currently constructing equipment for. This approach uses the emergency frequency the least number of times and conserves battery energy when no equipment failure is present. Transmission on the emergency frequency after the completion of the normal operating cycle has one additional advantage. In the case of interrogation by the base station it will be possible to predict when the first transmission from the field unit should have taken place with sufficient accuracy to allow the receiver covering that frequency to be switched to the emergency channel

in time to copy any transmission on the emergency frequency.

Certainly, the solution to the problem that is currently employed is not an ideal one but it does appear to have the greatest number of advantages of any system to date and does not require additional base station equipment.

(Insert)

This would mean that in the event of a failure of the communication package to communicate on any of the automatically tuned frequencies during a "panic" transmission the base station would have the additional possibility of receiving two transmissions on the emergency frequency during the three hour transmission sequence.